# Maybe You Should Use Knitr

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**Abstract**

This is an abstract.

## 1 Introduction and Exercises

Some exercises:

- What happens if you use `print` instead of `cat` in the `r_example2` chunk of Section 2?

- What happens if refer to the undefined variable `y` instead of `x` in the `r_example2` chunk of Section 2? How does the error appear?

- What do you seen when you set `knitr_debug <- TRUE` in the `setup` chunk of Section 2?

- Suppose nothing works and you think the `data_path` variable is messed up. How can you print its value in the LaTeX pdf?

- What do you seen when you set `knitr_cache <- TRUE` in the `setup` chunk of Section 2? (Try knit-ing before and after removing the `figure` directory.)

- Figure 2 uses `GridExtra::grid_arrange` to make side-by-side images. Can you do the same thing with float environments and two separate images?

The iteresting stuff in is in Sections 2 and 3, which are generated by knitr.

## 2  Experiment One

In between the knitr chunks, this is just an ordinary LaTeX document. The content inside the code chunks gets run in R. By default, the code runs silently. If you add the option `results="asis"` then the output gets inserted verbatim into the tex document. This can be used to make tables or define macros.

$1 + 10 = 11$

$x = 6.000000$

Figure insertion uses a special set of semantics — see below for examples.

I use the `define_macros.R` script to specify macros defined from the `Rdata` file. Examples follow. For this experiment, we generated $1,000$ observations. They looked like a mess, as you can see in Figure 1.
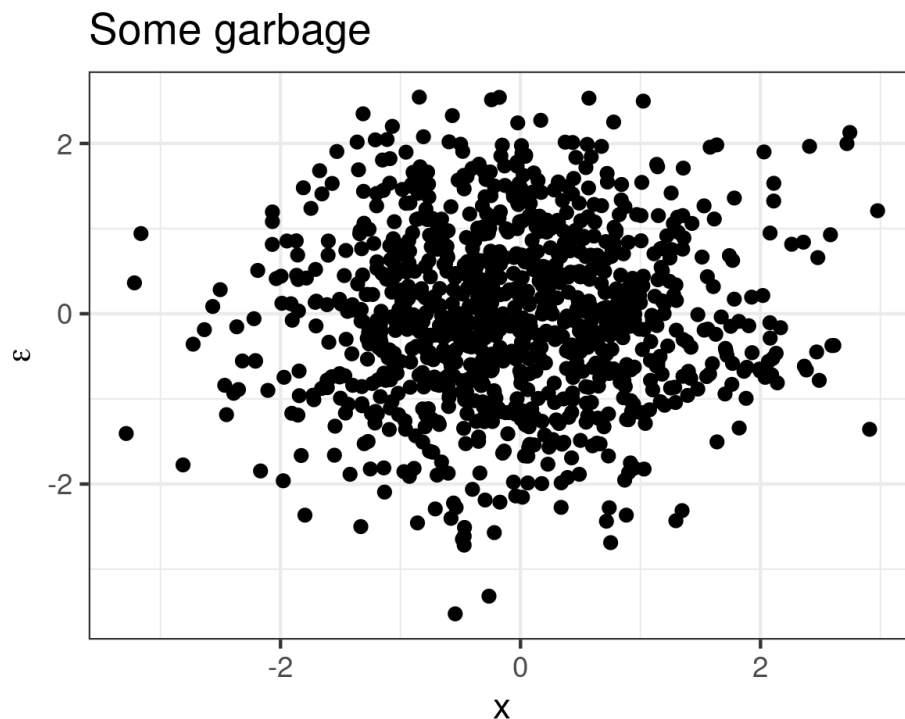


Figure 1: It's nice to have a long figure caption that allows easy access to latex stuff like there were $1,000$ draws of $x$ and $\epsilon$ that went into this plot.
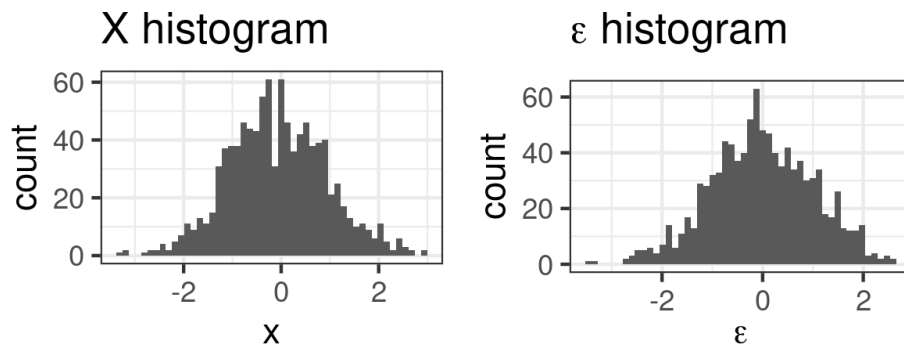
And Figure 2 as well. What garbage.

Figure 2: You can reuse this variable for other captions.

# 3 Experiment Two

We generated $1,000$ observations again, but now we used an offset $\beta = 5$. They looked better, but we already showed you how to make a graph, so instead we'll show it in Table 1.

| metric | x | y |
|---|---|---|
| mean | -0.0751 | -0.3913 |
| sd | 1.0112 | 5.2012 |
| max | 2.9757 | 16.0883 |

Table 1: Amazing summary stats